COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Preston Bryant
Secretary of Natural Resources

David K. Paylor
Director

July 8, 2009

Mr. Jeffrey Marcell
Senior Environmental Compliance Coordinator
Virginia Dominion Power
Possum Point Power Station
19000 Possum Point Road
Dumfries, VA 22026

RE: Virginia Power – Possum Point Power Station –VA0002071

Dear Mr. Marcell:

Attached are copies of the technical inspection report generated from observations made while conducting a Facility Technical Inspection at the **Virginia Power – Possum Point Power Station** on May 12, 2009. The water compliance/inspection staff would like to thank you and your staff for their time and assistance during the inspection.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Regional Office at (703) 583-3909 or by E-mail at wilamena.harback@deq.virginia.gov.

Sincerely,

Wilamena Harback

Wilamena Harback
Environmental Specialist II

cc: Permit/DMR File
Compliance Manager (Electronic)
Compliance Auditor (Electronic)
Enforcement (Electronic)
Waste Program Manager (Electronic)
Steve Stell – OWCP
Rick Woolard – Dominion (E-mail)

Recon Inspection Report – Coal Fly Ash Impoundments
Virginia Department of Environmental Quality

FACILITY NAME: Dominion Possum Point Power Station		**INSPECTION DATE:**	05-13-09
		INSPECTOR	Wilamena Harback Joseph Trocchio
PERMIT No.:	**VA0002071**	**REPORT DATE:**	05-27-09
TYPE OF FACILITY: ☐ Municipal ☑ Major ☑ Industrial ☑ Minor ☐ Federal ☐ Small Minor		**TIME OF INSPECTION:**	**Arrival** 0830 / **Departure** 1205
		TOTAL TIME SPENT (including prep & travel)	16 hours
PHOTOGRAPHS: ☑ Yes ☐ No		**UNANNOUNCED INSPECTION?** ☐ Yes ☑ No	
REVIEWED BY / Date:	05-27-09		
PRESENT DURING INSPECTION:	DEQ: Wilamena Harback & Joseph Trocchio Dominion: Rick Woolard & Keith Homza		

INSPECTION OVERVIEW AND CONDITION OF IMPOUNDMENT(s)

1. How many coal ash or fly ash impoundments are on site? a. Identify impoundment(s) by Outfall Number and/or other numbering methods (attach a sketch, diagram, or flow-chart showing approximate site locations and indicate direction of 'North').	**1. Two impoundments.** **a. Ash Pond D, which if it discharges any flow would discharge into Ash Pond E. Ash Pond E has a VPDES outfall which is the facility Outfall 005 discharging into Quantico Creek. (See attached aerial photo.)**
2. Has any other wastewater or other waste been placed in any of the impoundment(s)? If so, identify the impoundment and the other materials.	**2. Yes. Ash Pond D only receives storm water. Ash Pond E receives flow from the following: Ash Pond D, Tank Bottoms, Storm water & from internal Outfall 501 and internal Outfall 502. Outfall 501 receives discharge from the following: air pre-heater washes, mechanical dust collectors, and precipitator rinse. This pond discharges into the next pond in series which has Outfall 502. This second pond receives the discharge from Outfall 501, storm water and oily waste from various operations.**
3. What is the size and depth of each impoundment? [If approximate size and/or depth indicate so in the answer.]	**3. Ash Pond D has an earth fill berm dam with a total height of 140 feet. It is 120 acres and a capacity of 6400 acre feet. Ash Pond E also has an earth fill berm dam with a total height of 40 feet. It is 31.6 acres and a capacity of 600 acre feet.**
4. When was each impoundment placed into service? [If approximate indicate so in answer.]	**4. Ash Pond D was built and in service from 1989 through May of 2003. Ash Pond E was built in 1968 and still has an active VPDES outfall (Outfall 005). However, coal is no longer used at this site so no new fly ash has been added since May of 2003.**
5. Plans and specifications a. Are plans and specifications maintained and available? b. Are there plans and specifications available for each impoundment?	**5.** **a. Yes, see below.** **b. Yes, see below.**
6. Did a professional engineer design the impoundment(s)? a. If so, provide the name of the design firm and/or engineer providing the design.	**6. Yes.** **a. Ash Pond D was designed by Dominion Power's in house engineering group (all P.E.'s). The impoundment and earthen dam was constructed between 1987-1988. Ash Pond E was designed by Stone & Webster Engineering Corporation in 1966. All plans and drawings are sealed by a P.E. The facility also reported the following: "In 1977, the dike failed along the original outfall piping and the outfall structure and piping were redesigned by Torrence, Dreelin, Farthing**

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	& Buford, with drawing sealed by P.E. The dike and outfall were rebuilt in 1977 …" There have been no issues with the dike or outfall structure since. (See attached photos.)
7. List the type of liner for each impoundment, or indicate "none" or "unknown material".	**7. Ash Pond D has a packed clay liner. Ash Pond E has none.**
8. Is solids depth/accumulation for each impoundment monitored and recorded by the permittee? a. If so, provide the most recent information regarding solids depth/accumulation.	**8.** **a. Ash Pond D is approximately ¼ full. Ash Pond E is approximately ¾ full.**
9. Have coal fly ash or impoundment solids been placed within the impoundment in a fashion that the solids level is higher than the berm elevation? a. If so, did a professional engineer evaluate and take into account the berm's ability to withstand the addition of these materials? b. If so, has the potential of sloughing of these materials and the resulting potential effect on the integrity of the berm been addressed? c. If so, what is the approximate greatest slope of the pile(s)?	**9. The solids level is well below the berm level in both Ash Pond D and Ash Pond E. All solids are well below the berm levels with significant freeboard present.** **a. NA** **b. NA** **c. NA**
10. Solids Removal: a. Are solids removed from the impoundment(s)? b. If so, by what process and how often? c. If so, where is the removed material placed (indicate any interim and final storage)?	**10. The facility is no longer a coal fired power plant (converted to natural gas in May 2003).** **a. When it was a coal fired power plant (prior to May 2003), the facility would send the fly ash slurry to Ash Pond E and periodically dredge it.** **b. Ash Pond E has received a partial dredge in late 2002 and early 2003. At that time approximately 250,000 cubic yards of material was dredged and placed in Ash Pond D.** **c. The dredged material from Ash Pond E would then be placed in Ash Pond D. The ponds have not been dredged since 1999.**
11. Groundwater Monitoring: a. Are there groundwater monitoring wells present for each impoundment? b. If so, how many wells are associated with each impoundment? c. If so, what is the frequency of groundwater monitoring?	**11. Due to their proximity, and how Ash Pond D is connected to Ash Pond E, they were treated as one for the placement of groundwater monitoring wells per their VPDES individual permit.** **a. Yes there are groundwater wells present for each pond and some that are for both ponds as a whole unit. (See below in letter c)** **b. There are a total of 15 groundwater monitoring wells.** **c. All groundwater monitoring wells are sampled per the VPDES individual permit. The following wells are sampled semi-annually: Ash Pond D (ED-1, ED-3, ED-9R, ED-15, ED-24R & ED-32) and Ash Pond E (ES-1. ES-3a & ED-4). The following wells are sampled annually for both ponds: ED-4, ED-5, ED-17, ED-31, ED-26 & ED-33).**
12. What is the approximate distance from the closest stream/river to the berm for each impoundment?	**12. Occoquan Creek is where the VPDES Outfall 005 from Ash Pond E discharges.**
13. Berm Condition: a. During the inspection was the entire perimeter of the berm accessible for visible inspection? b. Does the berm have protective cover (e.g., vegetative cover, rip rap, etc? c. How often is vegetation cut on the berm? d. Is there woody vegetation present on the berm?	**13.** **a. Yes for both Ash Pond D and Ash Pond E.** **b. Yes, both berms have a vegetative cover.** **c. Grass is cut at a minimum of twice per year during the warmer months. If necessary, the frequency can be increased to keep up with a more vigorous growing**

e. Is there any run-on (surface water flow) into the impoundment(s)? f. Are there diversion ditches present to divert surface flow around or away from the impoundment(s)? i. If so, do the ditches effectively divert all run-on away from the impoundment? ii. If so, what is the condition of these diversion structures? g. Is there any evidence of any apparent seepage on the outside of the berm? h. Are there any areas of erosion or sloughing on the inside or outside of the berm? i. Is there evidence of burrowing animal activity in the berm?	**season.** **d. None present for either.** **e. No surface water flow other than rainfall.** **f. Yes for both ponds.** **i. Yes for both ponds.** **ii. Good condition, with grassy vegetation cut at the same time as the berm vegetation.** **g. None noted during the inspection.** **h. <u>Pond D</u> has no evidence of erosion on the inside or outside of the berm. There was one section where vegetation was not taking and the facility recently re-graded it and is in the process of reseeding it. (See attached photos.) <u>Pond E</u> has no evidence of erosion on the outside of the berm. However, there is one small section on the inside of the berm where there appears to be some erosion. The railing along the side of the berm road is no longer secured in the ground and has shifted. (See attached photos.) This section was also mentioned in the most recent DCR inspection on 05-29-2008.** **i. None noted during the inspection.**
14. Berm Modifications: a. Has the berm of the impoundment(s) been built up (raised in elevation) since placed into service? b. If so, when did this occur? c. If so, was the added material 'keyed into' the berm? d. If so, were professional engineering considerations given and implemented to the berm withstanding the increased capacity? e. If so, did DEQ approval of the modification?	**14.** **a. Neither Ash Pond D nor Ash Pond E have had the berms built up since placed in service. Ash Pond E has had some repair in 1977. See question #6 for specific information.** **b. NA** **c. NA** **d. NA** **e. NA**
15. Berm inspections by facility staff: a. At what intervals does the facility staff inspect the perimeter of the berm/dike? b. Are the facility staff trained? c. Is the entire perimeter inspected? d. Are these inspections documented?	**15.** **a. The facility staff inspects the ponds including the berms on a quarterly basis. Additionally, one of the Dominion internal P.E.'s completes a comprehensive inspection annually.** **b. Yes the facility staff goes through training which is updated documented in the Quarterly Report.** **c. Yes and it is documented in the Quarterly Report.** **d. Yes and the most recent reports were reviewed by DEQ Staff while on site. (January 2009)**
16. Impoundment Freeboard: a. Is there a minimum freeboard requirement specified in the Permit or Operations and Maintenance Manual? If not, is there a minimum freeboard included as standard operation? b. What is the current freeboard level of the impoundment(s)? c. How often is the freeboard checked and recorded? d. Is the freeboard measured correctly (i.e., the vertical distance from the waste water level to the lowest point on the berm [includes any emergency overflow point])?	**16.** **a. There is no minimum freeboard listed in the Operation and Maintenance (O&M) Manual. However, on site personnel informed DEQ that the facility tries to keep a minimum of 3-6 feet.** **b. <u>Ash Pond D</u> has an approximate freeboard of 43 feet as listed in the most recent DCR inspection on 05-29-2008. Based upon the site inspection that number would still appear to be correct. <u>Ash Pond E</u> appeared to have at least three feet at the highest point. However, this pond was also actively discharging at the time of the inspection through Outfall 005.** **c. At a minimum of Quarterly and documented in the Quarterly Report.** **d. Yes and verified through regular quarterly internal inspection and through an annual inspection by internal P.E.'s and through an annual inspection by**

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	DCR.
17. Emergency Spillway: a. Is there an emergency spillway or overflow present for the impoundment(s)? b. If so, is the emergency spillway in good condition? c. If so, did a professional engineer design the emergency spillway? d. If so, what is the approximate size of the spillway (or describe design and approximate size)?	**17.** **a. Yes, there is one for Ash Pond D. There is a dedicated earthen spillway lined with rip-rap.** **b. The spillway is in good condition. (See attached photos.)** **c. Yes, see question #6.** **d. The spillway has a maximum capacity is approximately 5450 CFS.**
18. Operations and Maintenance (O&M) Manual a. Is there an approved O&M Manual which includes all impoundments? b. If so, when was the O&M Manual approved? c. Does the O&M Manual adequately address berm vegetative maintenance? d. Does the O&M Manual address periodic inspections of the entire berm perimeter for potential problems (i.e., seeps, sloughing, rodent burrows, woody vegetation)? e. Does the O&M Manual address solids removal protocol and approved solids disposal.	**18.** **a. There is an O&M Manual dated February 2008 that the facility keeps on site and periodically reviews. The current O&M Manual was approved by DCR on February 27, 2008.** **b. Yes, by DCR on February 27, 2008.** **c. Yes.** **d. Yes.** **e. Yes.**
19. Are there any closed out coal ash or fly as impoundments on site? a. If so, record the number of closed impoundments, describe impoundment size, close-out process (include whether close-out resulted in any stored/entombed coal ash or fly ash being above grade), describe cap (material used, protective cover established), groundwater monitoring, and close-out date.	**19. Since the facility no longer uses coal, the two Ash Ponds are no longer in active use, however, neither one has been closed out, nor does the facility have any plans to close them out at this time.** **a. Additionally, at one time the facility had three other Ash Ponds, Ash Ponds A, B and C. The facility was checking into the historical information on these three ponds, but as of July 8, 2009 DEQ had not received any further information on them. If this information is later received, it will be attached to this report.**

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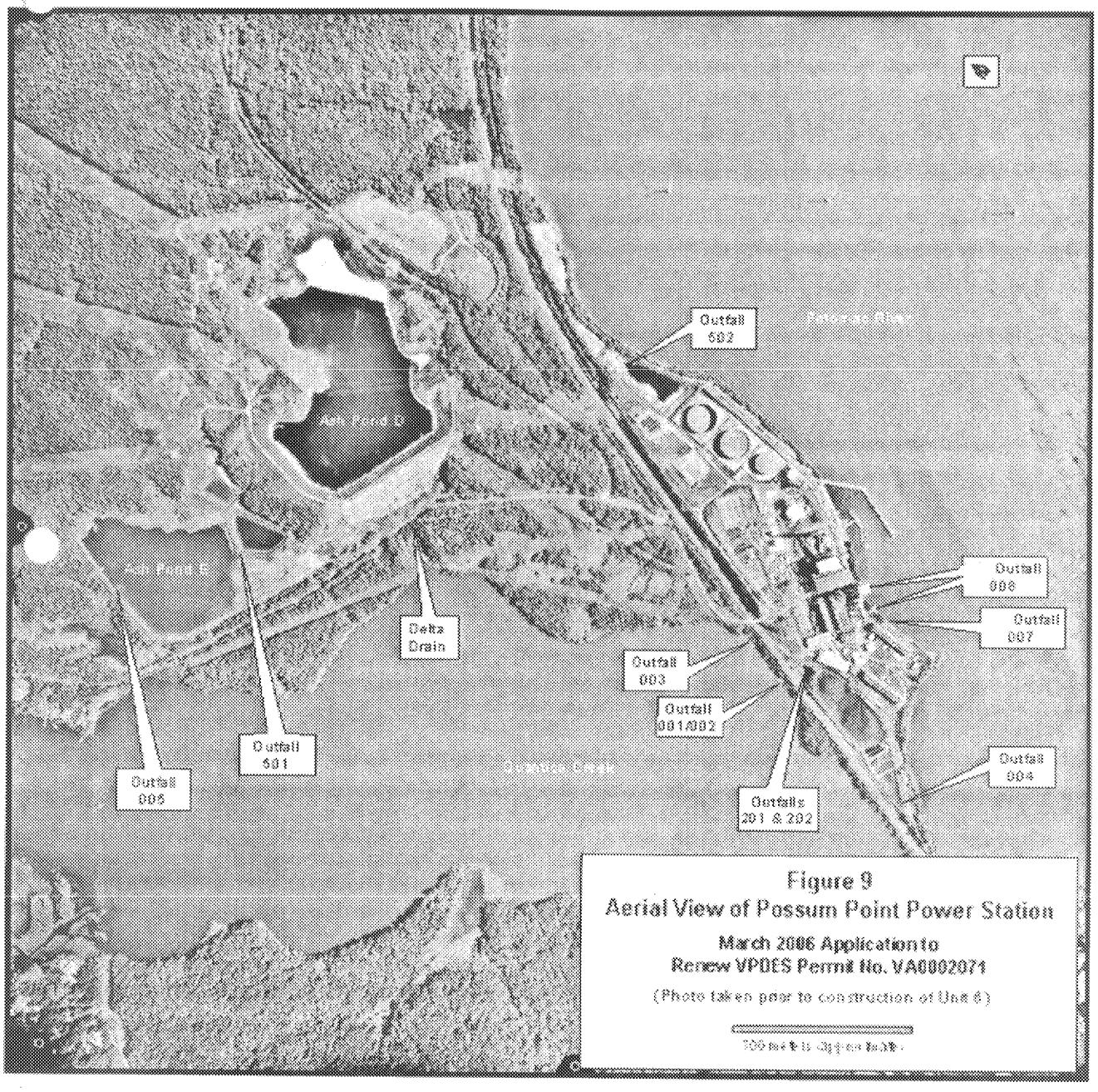
Permit #	VA0002071

IMPOUNDMENT(s) SITE SKETCH/PHOTO



Attachment 2

*Attachment 2 as seen above was copied from the permit renewal for VPDES Permit VA0002071. Permit effective dates are October 24, 2007 through October 23, 2012.

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Permit #	VA0002071

CONDITION OF OUTFALL AND EFFLUENT CHARACTERISTICS:

***Only Outfall 005 and Internal Outfall 501 were viewed during this inspection.**

1. Type of outfall: ☑ Shore based ☐ Submerged Diffuser? ☐ Yes ☑ No
2. Are the outfall and supporting structures in good condition? ☑ Yes ☐ No
3. Final Effluent (evidence of following problems): ☐ Sludge bar ☐ Grease
   ☐ Turbid effluent ☐ Visible foam ☐ Unusual color ☐ Oil sheen
4. Is there a visible effluent plume in the receiving stream? ☐ Yes ☑ No
5. Receiving stream: ☑ No observed problems ☐ Indication of problems (explain below)

Comments:

REQUIRED CORRECTIVE ACTIONS:

NA

NOTES and COMMENTS:

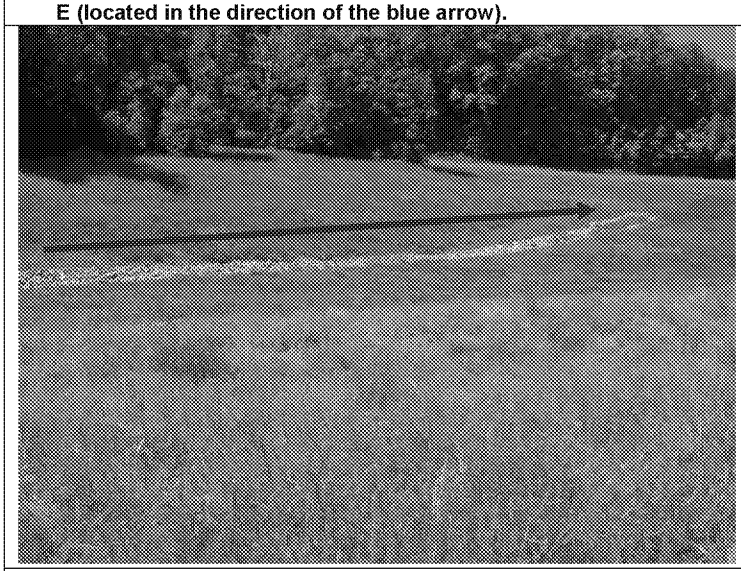
- The facility should evaluate the one section of Ash Pond E where there was some erosion on the inside of the berm. The railing along the side of the berm road is no longer secured in the ground and has shifted. (See attached photos.) This section was also mentioned in the most recent DCR inspection on 05-29-2008.

1) Ash Pond D at the outlet structure (red). Note the significant freeboard.

2) Different view of Ash Pond D (to the left of photo #1).

3) Outlet to Ash Pond D (red), concrete lined and discharges into Pond E (located in the direction of the blue arrow).

4) Emergency spillway (red) for Ash Pond D.



5) Continuation of photo #4, emergency spillway (red) continued for Ash Pond D.

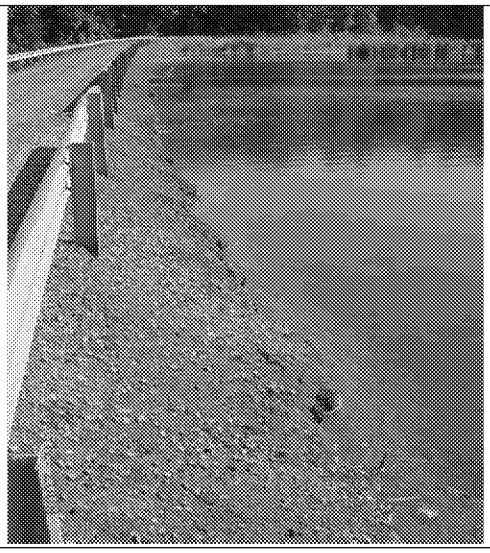
6) Area on Ash Pond D that was recently re-graded and re-seeded.

Dominion Possum Point Photos by: Wilamena Harback Layout by: Wilamena Harback	VA0002071 May 12, 2009 Page 1 of 2

7) Ash Pond E at the principal outlet/spillway to Outfall 005.

8)Stairs to Outfall 005 from Ash Pond E.

9) Outfall 005 from Ash Pond E.



10) Ash Pond E with approximate freeboard.

11) View of the Ash Pond E. The area with the erosion issue is at the red arrow.

Dominion Possum Point Photos by: Wilamena Harback Layout by: Wilamena Harback	VA0002071 May 12, 2009 Page 2 of 2